WHAT IS CLAIMED IS:

1. An end cap for a segment of an electromagnetic machine having wire, the segment having a yoke portion with an outboard end, a tooth portion extending from the yoke portion, and a pole end on the tooth portion, the end cap comprising:

a first inboard leg extending from the end cap and positioning adjacent one side of the tooth portion;

a second inboard leg extending from the end cap and positioning adjacent another side of the tooth portion; and

an outboard leg extending from the end cap and positioning adjacent the outboard end of the yoke portion.

2. The end cap of claim 1, wherein the first and second inboard legs position on the sides of the tooth portion with an interference fit.

3. The end cap of claim 2, wherein the first and second inboard legs each have an edge positioning against the side of the tooth portion with the interference fit.

4. The end cap of claim 2, wherein the first and second inboard legs each have a face positioning against an inboard side of the pole end.

5. The end cap of claim 1, wherein the outboard leg positions within a slot defined in the outboard end of the yoke portion.

6. The end cap of claim 1, wherein the end cap has a surface that positions adjacent the segment, the surface defining at least one recessed area adjacent one of the legs for receiving a portion of material potentially scrapped from the one leg when the end cap is positioned on the segment.

7. The end cap of claim 1, wherein the first and second inboard legs each have a distal end, each of the distal ends substantially meeting with the distal end of the inboard leg on another end cap positioning on an opposing surface of the segment.

8. The end cap of claim 7, wherein the first and second inboard legs on the opposing end caps substantially cover an outboard surface of the pole end of the segment.

9. The end cap of claim 1, wherein the end cap includes:

a body portion positioning adjacent the yoke portion and having an inboard side substantially perpendicular to the tooth portion,

an inboard wall positioning adjacent the pole end and having an outboard side, the outboard side substantially opposing the inboard side of the body portion;

a winding portion positioning adjacent the tooth portion and connected between the body portion and the inboard wall, the winding portion having an angled surface, the angled surface angling from the winding portion to the outboard side of the inboard wall and configured to position wire in the area between the body portion and the inboard wall.

10. The end cap of claim 9 , wherein the first and second inboard legs each have an angled surface on an outboard side of the leg, the angled surface angling from the side of the tooth portion and configured to position wire in the area between the pole end and the yoke portion.

11. The end cap of claim 10, wherein the angled surface of the inboard wall and the angled surfaces of the inboard legs define substantially the same angle relative to the tooth portion.

12. The end cap of claim 11, wherein the angled surface of the inboard wall transitions smoothly to the angled surfaces of the inboard legs.

13. A stator for an electromagnetic machine having wire, comprising:

a segment of the stator, the segment having a yoke portion with an outboard end, a tooth portion extending from the yoke portion, and a pole end on the tooth portion;

an end cap positioning adjacent the segment and including:

a first inboard leg extending from the end cap and positioning adjacent one side of the tooth portion;

a second inboard leg extending from the end cap and positioning adjacent another side of the tooth portion; and

an outboard leg extending from the end cap and positioning adjacent the outboard end of the yoke portion.

14. An electromagnetic machine, comprising:

a stator having a segment, the segment having a yoke portion with an outboard end, a tooth portion extending from the yoke portion, and a pole end on the tooth portion;

an end cap positioning on the segment and including:

means on the end cap for engaging sides of the tooth portion with an interference fit; and

means on the end cap for engaging the outboard end of the yoke portion.

15. The stator of claim 14, further comprising means for substantially covering an outboard surface of the pole end.

16. The stator of claim 14, wherein:

the segment includes a surface on which the end cap positions,

the end cap defines a slot area for winding wire about the surface and the sides of the tooth portion, and

the end cap further comprises means on the end cap for providing the slot area with substantially similar cross-sectional areas at the surface of the tooth portion and at the sides of the tooth portion.

17. An end cap for a segment of an electromagnetic machine having wire, the segment having a yoke portion with an outboard end, a tooth portion extending from the yoke portion, and a pole end on the tooth portion, the end cap comprising:

a body portion positioning adjacent the yoke portion and having an inboard side substantially perpendicular to the tooth portion;

an inboard wall positioning adjacent the pole end and having an outboard side, the outboard side substantially opposing the inboard side of the body portion;

a first inboard leg extending from the end cap and positioning adjacent one side of the tooth portion;

a second inboard leg extending from the end cap and positioning adjacent another side of the tooth portion; and

a winding portion positioning adjacent the tooth portion and connected between the body portion and the inboard wall, the winding portion having an angled surface, the angled surface angling from the winding portion to the outboard side of the inboard wall and configured to position wire in the area between the body portion and the inboard wall.

18. The end cap of claim 17, wherein the first and second inboard legs each have an edge positioning against the side of the tooth portion with an interference fit.

19. The end cap of claim 17, wherein the first and second inboard legs each have an angled surface on an outboard side of the legs, the angled surface angling from a side of the tooth portion and configured to position wire in the area between the pole end and the yoke portion.

20. The end cap of claim 19, wherein the angled surface of the inboard wall and the angled surfaces of the inboard legs define substantially the same angle relative to the tooth portion.

21. The end cap of claim 20, wherein the angled surface of the inboard wall transitions smoothly to the angled surfaces of the inboard legs.

22. The end cap of claim 17, wherein the first and second inboard legs each have a distal end, each of the distal ends substantially meeting with the distal end of the inboard leg on another end cap positioning on an opposing surface of the segment.

23. A stator for an electromagnetic machine having wire, comprising:

a segment of the stator, the segment having a yoke portion with an outboard end, a tooth portion extending from the yoke portion, and a pole end on the tooth portion;

an end cap positioning adjacent the segment and including:

a body portion positioning adjacent the yoke portion and having an inboard side substantially perpendicular to the tooth portion;

an inboard wall positioning adjacent the pole end and having an outboard side, the outboard side substantially opposing the inboard side of the body portion;

a first inboard leg extending from the end cap and positioning adjacent one side of the tooth portion;

a second inboard leg extending from the end cap and positioning adjacent another side of the tooth portion; and

a winding portion positioning adjacent the tooth portion and connected between the body portion and the inboard wall, the winding portion having an angled surface, the angled surface angling from the winding portion to the outboard side of the inboard wall and configured to position wire in the area between the body portion and inboard wall.

24. An end cap of an electromagnetic machine having a stator with a plurality of adjacent segments, the end cap positioning on one of the adjacent segments and having first and second ends, wherein the ends on the end cap couple to ends on adjacent end caps to substantially hold the adjacent segments together.

25. The end cap of claim 24, wherein the end cap includes a first coupling on the first end and a second coupling on the second end.

26. The end cap of claim 25, wherein the first coupling adjustably couples with the second coupling for adjusting alignment between the adjacent end caps.

27. The end cap of claim 25, wherein the first coupling includes a male member and the second coupling includes a female member, the male and female members on the adjacent end caps mating with one another.

28. The end cap of claim 27, wherein the male member includes a bifurcate catch extending from the first end of the body portion and snap fitting in the female coupling.

29. The end cap of claim 27, wherein the female member includes a snap slot defined in the second end.

30. The end cap of claim 27, wherein the male member positions adjacent a slotted end of the segment, and wherein the female member positions adjacent a ridged end of the segment.

31. The end cap of claim 24, wherein the ends of the end cap define slots, and wherein a clip has a first and second portions fitting in the adjacent slots in the adjacent ends of the adjacent end caps.

32. The end cap of claim 24, wherein the segment has a surface on which the end cap position, and wherein the end cap further comprises:

a slot defined in the first end and having an open side exposing the surface of the segment, and

a finger extending from the second end and having a side substantially on the same plane as the surface of the segment,

wherein the finger fits within the slot on the adjacent end cap and the side of the finger positions against the surface of the adjacent segment so that the surfaces of the adjacent segments lie substantially on the same plane.

33. A stator for an electromagnetic machine, comprising:

a plurality of adjacent segments; and

a plurality of end caps, each end cap positioning on one of the adjacent segments and having first and second ends,

wherein the ends on the adjacent end caps couple together to substantially hold the adjacent segments together.

34. An electromagnetic machine, comprising:

a stator having a plurality of adjacent segments;

a plurality of end caps, each end cap positioning on one of the adjacent segments and having first and second ends; and

means for coupling the first and second ends of the adjacent end caps to substantially hold the adjacent segments together.

35. An end cap for an electromagnetic machine having a stator, the stator having a plurality of adjacent segments, each segment having a segment surface, the end cap comprising:

a body having a body surface positioning against the segment surface of one of the segments such that the body surface and the segment surface lie on substantially the same plane,

wherein a portion of the body surface positions against the surface of the adjacent segment such that the surfaces of the adjacent segments lie substantially on the same plane.

36. The end cap of claim 35, wherein the portion of the body surface includes a finger extending from a first end of the body.

37. The end cap of claim 36, wherein body includes a slot defined in a second end of the body, the slot having an open side exposing the surface of the segment, the slot receiving the finger of the adjacent end cap on the adjacent segment.

38. The end cap of claim 36, wherein the finger is positioned adjacent a ridged end of the segment, and wherein the slot is positioned adjacent a slotted end of the segment.

39. The end cap of claim 36, wherein the body further comprises:

a female coupling on the first end of the body adjacent the finger; and

a male coupling on the second end of the body adjacent the slot,

wherein the male and female couplings on the adjacent end caps mate with one another to substantially hold the adjacent segments together.

40. The end cap of claim 39, wherein the male member includes a bifurcate catch extending from the first end and snap fitting in the female member.

41. The end cap of claim 39, wherein the female member includes a snap slot defined in the second end.

42. A stator for an electromagnetic machine, comprising:

a plurality of adjacent segments of the stator, each segment having a segment surface; and

a plurality of end caps, each end cap comprising:

a body having a body surface positioning against the segment surface of one of the segments such that the body surface and the segment surface lie on substantially the same plane,

wherein a portion of the body surface positions against the surface of the adjacent segment such that the surfaces of the adjacent segments lie substantially on the same plane.

43. An electromagnetic machine, comprising:

a stator having a plurality of adjacent segments, each segment having a segment surface;

a plurality of end caps, each end cap positioning against the segment surface of one of the adjacent segments and having first and second ends; and

means on the end caps for aligning the first and second ends of the adjacent end caps such that the segment surfaces of the adjacent segments lie on substantially the same plane.

44. A method of assembling a stator for an electromagnetic machine, the stator having a plurality of segments and a plurality of end caps, the method comprising the steps of:

a) positioning an end cap on each of the segments;

b) positioning ends of the segments adjacent one another; and

c) substantially holding the ends of the adjacent segments together by coupling ends of the adjacent end caps together.

45. The method of claim 44, wherein the step (b) comprises the step of positioning a ridged end of one segment into a slotted end of the adjacent segment.

46. The method of claim 44, wherein the step (c) comprises the step of mating male and female members on the ends of the adjacent end caps.

47. The method of claim 44, wherein the step (c) comprises the step of fitting clips in slots defined in the adjacent ends on the adjacent end caps.

48. The method of claim 44, wherein the step (c) comprises the step of permitting movement at the coupled ends of the adjacent end caps in a direction generally parallel to a central axis of the stator.

49. The method of claim 44, wherein the step (a) comprises the step of substantially retaining the end caps on the segments by engaging the end caps on the tooth portions with an interference fit.

50. The method of claim 44, wherein the step (a) comprises the steps of:

positioning a surface of each end cap against a segment surface of each segment;

substantially aligning the segment surfaces of the adjacent segments on substantially the same plane by fitting a portion of each end cap surface against the segment surface of at least one of the adjacent segments.

51. A method of assembling a stator of an electromagnetic machine, the stator having a plurality of segments, a plurality of end caps, and wire, each segment having opposing surfaces, a tooth portion, and a pole end, the method comprising the steps of:

a) positioning the end caps on the opposing surfaces of the segments;

b) substantially retaining the end caps on the segments by engaging the end caps on the tooth portions with an interference fit;

c) winding the wire on the segments and the end caps; and

d) forming the segments into the stator.

52. The method of claim 51, wherein step (b) comprises the step of fitting first and second legs on each end cap on sides of each tooth portion with the interference fit.

53. The method of claim 52, wherein the step of fitting first and second legs on each end cap on sides of each tooth portion with the interference fit further comprises the step of substantially covering an outboard surface of each of the pole ends with the legs of the end caps.

54. The method of claim 51, wherein the step (c) comprises the step of winding the wire in a slot area around each of the tooth portions by forming the slot area with an angled surface on each end cap that angles from the opposing surface of the tooth portion to the pole end.

55. The method of claim 54, wherein the step (c) comprises the step of forming the slot area with angled surfaces on each end cap that angle from sides of the tooth portion to the pole end.

56. The method of claim 51, wherein the step (d) comprises the step of positioning a ridged end of one of the segments into a slotted end of another of the segments.

57. The method of claim 51, wherein the step (d) comprises the step of substantially holding the ends of the adjacent segments together by mating adjacent ends of the end caps together.

58. The method of claim 51, wherein step (d) further comprises the steps of substantially aligning one of the opposing surfaces of each of the adjacent segments on substantially the same plane by positioning a portion of the surface on each of the end caps against the opposing surface of at least one of the adjacent segments.